

AMENDMENTS TO THE SPECIFICATION

Please replace the paragraph on page 13, lines 1-7 with the following amended paragraph.

This structure allows the master home agent 26 to instantiate any number of multiple different home agents, each one isolated ~~for~~from the other by the operating system in the master home agent. This allows each home agent 62 to be configured differently, and provide different types of home agent services and configurations on a per-VPN basis. Each of the individual home agent instantiations 62A, 62B, . . . 62N are not aware of the different multiple virtual private networks within the master home agent platform; rather, they are simply handling registration requests, authentication and other functions according to their internal configuration.

Please replace the paragraph on page 13, line 19 through page 14, line 3 with the following amended paragraph.

The LAN interface 54 forwards packets from the virtual home agent service provider network 14 to an operating system OS IP stack 52 for the master home agent. The operating system in the chassis or master home agent 26 will typically support various communications features, such as an IP protocol stack or software module, of which persons skilled in the art are familiar. The incoming packet from the IP/IPX network 14 will have an IP address associated with one of N possible tunnels, such as $X_1.X_2.X_3.1$ (tun0 in Figure 3). The ~~OP-OS~~OS IP stack 52 uses this IP address to demultiplex the packet and select the proper home agent process 62 to process the packet.

Please replace the paragraph on page 16, line 21 through page 17, line 11 with the following amended paragraph.

It will also be appreciated that we have described a processing platform for a plurality of packets associated with a plurality of virtual private networks. The processing or computing platform could be implemented in a general-purpose computer configured with hardware interfaces and suitable software to function as a virtual home agent router, or other suitable device. The processing platform comprises a suitable central processing unit and an operating system program implemented by the central processing unit (e.g., Windows NT). The operating system has as a feature of an Internet Protocol (IP) stack. A plurality of home agents comprising multiple instantiations of a home agent program 62A, 62B, . . . 62N (Figure 3) are implemented in the computing platform. Each home agent is associated with one of the virtual private networks, and each home agent has or is associated with a unique IP address. A plurality of network interfaces 64 (Figure 3) are provided in the computing platform that receive the packets from the home agents. The IP stack 52 directs the packets to the home agents 62A, 62B, etc. assigned to the packets for processing, and the home agents forward the packets to the network interfaces 64 for transmission to a destination (e.g., a RADIUS server, foreign agent, host computer, etc.).

Please replace the paragraph on page 17, line 19 through page 18, line 19 with the following amended paragraph.

Referring now to Figure 2, the use of the AAA server 28 in performing registration request authentication functions for a plurality of mobile nodes will be described. For a mobile

node to communicate with its peer in the mobile IP protocol, it must be registered with the foreign agent. During the registration process, the foreign agent (e.g., one of the network access servers 13 of Figure 2) sends a registration request message to the home agent for the mobile device. To determine whether the mobile node should be registered or not, the home agent needs to perform an authentication function for the mobile node. This is to insure that only current subscribers are allowed IP network access, and to deny such access where the mobile node has not paid their bill, is no longer a current subscriber, or is otherwise unauthorized to access the service. While the registration request authentication function could be performed entirely within the computing platform in the master home agent chassis, we prefer to have the authentication function carried out in the AAA server 28. More specifically, information from the registration request (such as the mobile node's IMSI or ESN number, that is, serial number type of information uniquely identifying the device) is forwarded to the AAA server. The AAA server determines from this number whether the mobile node that is seeking registration is authorized or not. The AAA in turn sends a reply indicating the status of the registration request authentication back to the home agent 62 (that is, back to the particular instantiation of the home agent program that sent the authentication request to the AAA server). The home agent then sends back a reply to the registration request message back to the foreign agent, which in turn forwards it to the mobile node. If the registration request is denied, an error code may be included in the reply. Further details on this process are described in the patent application of Richard J. Dynarski, et al., "RADIUS-based Mobile Internet Protocol (IP) address-to-Mobile Identification Number Mapping for Wireless Communication", serial no. _____

~~filed January 19, 1999~~ U.S. Patent 6,466,571, issued October 15, 2002, the contents of which are
fully incorporated by reference herein.